

**MULTI-CORE TRANSFORMER PLASMA SOURCE**

**ABSTRACT OF THE DISCLOSURE**

A transformer-coupled plasma source using toroidal cores forms a  
5 plasma with a high-density of ions along the center axis of the torus. In one  
embodiment, cores of a plasma generator are stacked in a vertical alignment to enhance  
the directionality of the plasma and generation efficiency. In another embodiment,  
cores are arranged in a lateral array into a plasma generating plate that can be scaled to  
accommodate substrates of various sizes, including very large substrates. The  
10 symmetry of the plasma attained allows simultaneous processing of two substrates, one  
on either side of the plasma generator.

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